

## ABSTRACT

The present invention eliminates a DC offset problem due to self-mixing in performing frequency conversion on a multiband OFDM\_UWB signal by a direct conversion scheme.

Capacitors #1, #2, and #3 are provided for each of the hopping bands #1, #2, and #3. Capacitors are switched in synchronization with frequency hopping. For example, capacitor #1 stores electric charge just before frequency hopping from band #1 to another band #2, and continues a step response after hopping to band #1 again. Soon, the charging/discharging of capacitor #1 ceases and reaches a steady state.